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Project Cost Estimate for San Francisco Integrated DER Planning Project
Response to Questions from Office or Ratepayer Advocates on August 10, 2016

Project Applicants: City & County of San Francisco Department of Environment (SFE) and the Center for Sustainable Energy (CSE)

Total Project Cost Estimate: CSE provided a revised project cost estimate of \$389,551 to the CPUC and stakeholders in a June 24, 2016 presentation at the CPUC DRP Pilot workshop and through comments on the workshop that CSE filed on July 21, 2016. SFE submitted this updated project cost estimate to the U.S. Department of Energy (USDOE) on June 23, 2016 as prime applicant for a request for \$350,551 for a Cities Leading through Energy Analysis and Planning (LEAP) grant. SFE and CSE documented but did not request from the USDOE the estimated cost of CSE's engagement with DRP stakeholders and state-level process recommendations relating to this pilot (\$39,000). As of August 8, SFE and CSE have not yet received notification of the USDOE's decision but expect a determination within the next month. CSE requests funding through this proceeding the balance of the \$389,551 Project Costs not awarded by the USDOE.

Overview of Project Cost Estimate

	Budget Period 1 Costs	Budget Period 2 Costs	Total Costs Both Periods
SFE Personnel Costs	\$60,048	\$89,315	\$149,362
CSE Personnel Costs	\$109,649	\$125,860	\$235,509
SFE Travel and Meeting Costs	\$36	\$1,848	\$1,884
CSE Travel Costs	\$1,822	\$974	\$2,796
Total Costs	\$171,671	\$217,880	\$389,551

Components of Project Cost Estimate:

1. Personnel Costs for 2-year Project Period

SFE Personnel Hours & Costs (Task # refers to Tasks to Be Performed in Section C of Appendix A)

Task #	Position Title	Budget Period 1 (M1-10) Hours	Budget Period 2 (M11-24) Hours
1 thru 8	Sr. Energy Program Manager 5644	157	221
1 thru 5	Energy Program Manager 5642	14	36
1 thru 9	Energy Associate 5640	293	413
3	Energy Assistant 5638	18	27
1, 9	Sr. Account Clerk 1632	45	71
1 thru 9	Assistant 9922	219	307
Total Hours		746 Hours	1,075 Hours
Total Costs	Including direct personnel costs, fringe benefits and overhead costs	\$60,048	\$89,315

CSE Personnel Hours & Costs (Task # refers to Tasks to Be Performed in Section C of Appendix A)

Task #	Position Title	Budget Period 1 (M1-10) Hours	Budget Period 2 (M11-24) Hours
3	Director, Research & Analysis	20	0
1	Associate Director of Programs	8	0
1 thru 8	Sr. Manager, Policy & Strategy	382	495
8	Sr. Manager, Marketing	0	6
3	Sr. Analyst	60	0
2, 5, 6, 8	Policy Specialist	41	112
1	Project Manager	10	0
8	Marketing Manager	0	112
8	Sr. Graphic Designer	0	12
8	Marketing Associate	0	6
3	Research Analyst	170	0
8	Marketing Specialist	0	30
Total Hours		773 Hours	1464 Hours
Total Costs	Including direct personnel costs, fringe benefits and overhead costs	\$109,649	\$125,860

Justification for Personnel Cost Components: SFE's direct staff costs were based on the top of the City-approved salary band for each job classification. CSE direct staff costs were based on actual CSE staff salaries for each job classification. SFE's and CSE's indirect staff costs (fringe benefits and overhead rates) were each established through previously negotiated agreements with the USDOE. CSE's personnel costs include 220 hours of engagement with DRP stakeholders and state-level process recommendations relating to this pilot over two budget periods (\$39,000).

2. Travel and Meeting Costs

All travel costs are based on current U.S. General Services Administration rates.

SFE Travel and Meeting Costs (\$1,884):

- Tasks 3 (Data Sharing), 4 (Local Planning and Forecasting), and 5 (Integrated Planning) require local travel via public transit for 2 people to 3 meetings with other City departments and Pacific Gas & Electric (\$36).
- Task 8 (Dissemination) requires 1 trip for 1 traveler from San Francisco to a state or regional conference to share learnings from the project with state and local governments and utilities from California and other Western states (\$574).
- Task 8 (Dissemination) requires 1 trip for 1 traveler from San Francisco to a national conference to share learnings from the project with state and local governments and utilities from across the country (\$974).
- Meeting costs include refreshments for stakeholder work sessions in Task 1 (Project Kickoff), Task 5 (Integrated Planning), and Task 7 (Local Programs and Policies) (\$300).



CSE Travel Costs (\$2,796):

- Task 2 (Data Sharing) requires 1 trip for 2 travelers from headquarters in San Diego to San Francisco to discuss data sharing with City of San Francisco and Pacific Gas & Electric (\$1,248).
- Task 8 (Dissemination) requires 1 trip for 1 traveler from San Francisco to a state or regional conference to share learnings from the project with state and local governments and utilities from California and other Western states (\$574).
- Task 8 (Dissemination) requires 1 trip for 1 traveler from San Francisco to a national conference to share learnings from the project with state and local governments and utilities from across the country (\$974).

The Center for Sustainable Energy respectfully provides the foregoing information in response to a request by the Office of Ratepayer Advocates.

August 10, 2016

A handwritten signature in black ink that reads "Stephanie Wang". The signature is fluid and cursive, with the first name and last name clearly distinguishable.

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City and County of San Francisco
San Francisco Integrated Distributed Energy Resource Planning

Statement of Project Objectives

A. PROJECT OBJECTIVES

Goals:

The project team will demonstrate how local governments and utilities can work together to perform data-driven integrated DER planning in San Francisco, and will document the process, results and recommendations in a case study. The goals of the project are:

- Illuminate where and how DER deployment will support multiple goals, including net grid benefits, enabling consumers to invest in DERs, and meeting the City's climate, resilience, housing, equity and other planning goals.
- Demonstrate how to improve IOUs' and states' load and DER forecasts by incorporating local land use and DER plans, leading to better accounting for how DERs will contribute to the achievement of state and local climate goals.
- Show how local governments can develop programs and policies that encourage deployment of DERs that provide preferred performance and at optimal locations.
- Improve access and streamline data sharing between local governments and IOUs.
- Encourage replication of this project in California and beyond by engaging with California state policymakers and stakeholders, as well as by disseminating project information with municipal and state policymakers and stakeholders across the country.

Objectives:

Budget Period 1 (Months 1-10) -

1. Determine whether there is sufficient data available from the IOU and the City to perform integrated DER planning in San Francisco. Share data between IOU and City, and strive to address gaps in data.
2. Leverage this project in the ongoing CPUC Distribution Resource Plans proceeding.
3. Establish local DER targets, including where the DERs will be located to meet city planning and societal goals..

Budget Period 2 (Months 11-24) -

4. Identify where local DER plans will face grid hosting capacity limitations and explore how those limitations can be mitigated by DER design and performance or by grid investments.
5. Identify where DERs can be located and how DERs can perform to provide grid value, and explore opportunities for the City to access compensation or reduce costs by guiding DER deployment in ways that result in greater grid value.
6. Identify options for City programs and policies to encourage targeted deployment of DERs to achieve local societal goals while mitigating grid constraints.
7. Publish and disseminate a case study of integrated DER planning being applied in San Francisco.

B. TECHNICAL SCOPE SUMMARY

Budget Period 1 – The first 10 months of this two-year project will focus on data sharing, local DER planning, and engaging in CPUC proceedings. The project team will:

- Facilitate data sharing between the IOU and the City;
- Determine if the available data from the IOU and the City is sufficient to perform the integrated DER planning envisioned by the project, and identify deficiencies in the data that, if resolved, could improve the efficacy of the integrated planning;
- Set initial local DER targets and identify societally-preferred locations based on City plans related to land use, development, transportation, climate, and resilience; and
- Engage stakeholders to provide input and peer review throughout the project.

Budget Period 2 – The second 14 months of the project will focus on data-driven planning, analysis of policy options, and dissemination of the project results. The project team will:

- Assess the capacity of the IOU distribution grid to support DER growth in San Francisco, and analyze with stakeholders how DERs could be deployed and compensated to mitigate the need for costly grid infrastructure upgrades;
- Explore opportunities for the City to access compensation or reduce costs by guiding DER deployment in ways that result in greater grid value;
- Recommend potential incentives, rate structures and other policies the City could implement to encourage preferred DER performance and deployment in targeted locations;
- Encourage incorporation of local-level DER planning into state-level grid and climate plans; and
- Document the process and conclusions from the San Francisco pilot and share the results so that it may be replicated.

C. TASKS TO BE PERFORMED

BUDGET PERIOD 1 - [DATA SHARING, STATE-LEVEL ENGAGEMENT, AND LOCAL PLANNING & FORECASTING]

Task 1.0: Project Kickoff & Administration (M1-M10) Execute partner agreement, set up and implement project team communication plan, identify and engage stakeholders, activate project team, provide ongoing coordination and administration, and identify potential risks to project success and plan to overcome those risks.

Subtask 1.1: Accept and expend (M1-M2) – SFE obtain City approval to accept and expend EERE award monies.

Subtask 1.2: Contracting (M1-M3) – Execute project agreement between partners. Request technical assistance from U.S. Department of Energy.

Subtask 1.3: Recruit stakeholders (M2) – Identify and recruit relevant stakeholders to participate in the project.

Subtask 1.4: Kickoff meeting (M3) – Partners and stakeholders meet to review all tasks, roles, responsibilities, deadlines, develop project communications plan, and identify project risks. National Lab provide strategic direction under technical assistance request, if applicable.

Milestone 1.4.1 – Hold kickoff meeting.

Subtask 1.5: Communications (M3) – Schedule regular project team meetings. Set up webpage and files sharing.

Subtask 1.6: Administration (M1-M10) – Provide ongoing project coordination, and handle all project administration, including invoicing and documenting deliverables. Submit required reports and project updates to EERE and participate in EERE network calls, webinars and conferences.

Task 2.0: State-level Engagement (M1-M10) – Engage with California state agencies and stakeholders on the design and potential replication of the project through the CPUC’s Distribution Resource Plans proceeding.

Subtask 2.1 – CPUC DRP proceeding (M1-M10) Conduct state-level stakeholder meetings to receive input on how best to leverage the project in the CPUC’s Distribution Resource Plans proceeding.

Milestone 2.1.1 – Document the input received through state-level engagement.

Task 3.0: Data Sharing (M4-M10) Determine which types of City data will be the most useful inputs for utility forecasts, and which types of grid conditions data will be available and useful to the City. Work with the IOU and the City to share data, identify gaps for meeting project needs, and identify opportunities to improve available data and streamline data sharing.

Subtask 3.1: Identify data (M4-M6) – Identify types of data needed by the project and potential sources. Identify relevant data available from the City, the IOU, and other sources. City data will likely include plans related to land use, development, distributed energy resources, transportation, climate, and resilience. IOU grid conditions will likely include IOU load forecasts, IOU DER growth forecasts, and IOU distribution grid capacity for hosting DERs. Meet with IOU to discuss which types of City data will be the most useful inputs for its load and DER forecasts, and which types of grid conditions data will be available to the City.

Milestone 3.1.1 – Document data types needed, and sources of available data.

Subtask 3.2: Share data (M4-M10) – Obtain IOU grid conditions data and share City plans with IOU.

Subtask 3.3: Assess and streamline data sharing (M4-M10) – Assess the type, quality and availability of data relative to project’s data needs, and identify gaps. Identify opportunities to influence and improve accessibility, quality, and usefulness of publicly available data. Work with IOU to identify opportunities to streamline data sharing between the City and the IOU.

Milestone 3.3.1 – Document data shared between City and IOU, data gaps identified, and opportunities to improve available data and streamline data sharing.

Task 4.0: Local Planning and Forecasting (M6-M10) Establish local DER targets and societally-preferred locations.

Subtask 4.1: Local DER targets and preferred locations (M6-M10) –Work with local decision makers and stakeholders to develop initial quantity targets and determine preferred locations for DERs for purposes of meeting societal goals of city planning

efforts and consumer choice. Estimate local DER dispersion based on that input. This information will be shared with the IOU as part of Task 3.2.

***Milestone 4.1.1** – Summarize method and conclusions from effort to develop DER targets and identify societally-preferred locations.*

Budget Period 1 Go/No-Go Decision Point: (M10) – Project team determines that City and IOU have shared sufficient data to continue project. EERE agrees with determination.

BUDGET PERIOD 2 - [INTEGRATED PLANNING, LOCAL PROGRAMS, STATE PLANNING, AND DISSEMINATION]

Task 5.0: Integrated Planning (M11-M15) Demonstrate how a City can work with a utility to analyze DER deployment options, illuminating where DER deployment will support multiple goals including societal goals of city planning efforts, minimizing investments required in the distribution grid, and enabling consumer choice.

Subtask 5.1: Consider grid constraints (M11-M15) – Work with the IOU to determine which locally-preferred locations for DERs would face grid hosting capacity limitations, and the costs and options for overcoming these limitations through proactive grid investments. Hold working group meeting of City, CSE, IOU, National Lab (if applicable, under technical assistance), and stakeholders to identify how DERs can be deployed and operated to achieve local DER goals while mitigating grid constraints.

Subtask 5.2: Explore grid value opportunities (M11-M15) – Work with the IOU to identify where DERs can be located and how DERs can perform to provide grid value. Hold working group meeting of City, CSE, IOU, National Lab (if applicable, under technical assistance), and stakeholders to explore opportunities for the City to access compensation or reduce costs by guiding deployment of DERs in ways that provide grid benefits or reduce costs.

***Milestone 5.2.1** – Document findings of potential opportunities for DERs to be deployed and operated in San Francisco to mitigate grid constraints and provide grid value, and potential opportunities for the City to access compensation or reduce costs by guiding DER deployment in ways that result in greater grid value.*

Task 6.0: State-level Planning (M11-M18) – Encourage replication of the project throughout California and incorporation of local-level DER planning into state-level planning.

Subtask 6.1: Incorporate local data in state plans (M11-M18) – Develop and share recommendations for how states can adopt processes and provide technical assistance necessary to incorporate local land use and DER plans into state climate and energy plans.

***Milestone 6.1.1** – Document and share recommendations with California state regulators and stakeholders for incorporating local data into state-level planning.*

Task 7.0: Local Programs and Policies (M16-M18) – Explore opportunities for IOU forecasts and Integrated Planning information to be incorporated into the design of the City's DER programs and policies.

Subtask 7.1: Policy design options (M16-M18) – Hold working group meeting of City, IOU, National Lab (if applicable, under technical assistance), and stakeholders to explore

how the City could design policies, incentives programs and/or CleanPowerSF rate structures to encourage preferred DER performance and deployment in targeted locations.

***Milestone 7.1.1** – Develop recommendations on designing City programs and policies to encourage preferred DER performance and siting.*

Task 8.0: Dissemination (M13-M24) – Document the process for integrating community and grid planning with a case study of this project and share the results with other local governments, utilities and states using partner channels such as Green Cities CA, Urban Sustainability Directors Network (USDN), 100 Resilient Cities, C-40 and ICLEI. All communications will acknowledge U.S. Department of Energy’s support of the project.

Subtask 8.1: Case Study (M13-M21) – Document process used in and findings from Tasks 3-6 in a San Francisco case study of integrated DER planning. Include recommendations on City and IOU collaboration, and the technical assistance needed by local governments to perform integrated DER planning. Obtain review by City, IOU, stakeholders and National Lab (if applicable, under technical assistance).

***Milestone 8.1.1** – Publish San Francisco case study.*

Subtask 8.2: Education and Outreach (M21-M24) – Share this case study with state and local governments and utilities. Issue a press release and post information about the project on the City’s website. Share the case study through national webinar and at least one state or regional meeting or conference.

***Milestone 8.2.1** – Conduct national webinar.*

***Milestone 8.2.2** – Present case study at regional meeting of local governments.*

***Milestone 8.2.3** – Post case study on USDN, Green Cities CA and C-40 websites and, as appropriate, present about project at regular member meetings*

Task 9.0: Project Administration (M11-M24) – Continue to manage ongoing project team communications, stakeholder engagement, schedule, deliverables and project risks.

Subtask 9.1: Administration (M11-M24) – Provide ongoing project coordination, and handle all project administration, including invoicing and documenting deliverables. Submit required reports and project updates to EERE and participate in EERE network calls, webinars and conferences.

D. PROJECT MANAGEMENT AND REPORTING

San Francisco Department of the Environment will provide ongoing project coordination, including regular project team meetings and stakeholder updates. Project partners will share responsibility for project administration, including invoicing and reporting. Led by San Francisco, the project team will submit required reports and project updates to EERE and participate in EERE network calls, webinars and conferences. Reports and other deliverables will be provided in accordance with the Federal Assistance Reporting Checklist following the instructions included therein.

Additional deliverables as indicated in the task/subtask descriptions include the following:
Budget Period 1 -

1. Go/no-go decision: Project team's written determination whether City and IOU have shared sufficient data to continue project in Budget Period 2.

Budget Period 2 -

2. Subtask 8.1: Final San Francisco case study report.
3. Subtask 8.2: Webinar in which the San Francisco case study is presented to a national audience.
4. Subtask 8.2: Presentation of the San Francisco case study to a regional meeting of local governments.

Milestone Summary Table							
Recipient Name:		City and County of San Francisco					
Project Title:		San Francisco Integrated Distributed Energy Resource Planning					
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone or Go/No-Go Decision Point)	Milestone Number* (Go/No-Go Decision Point Number)	Milestone Description (Go/No-Go Decision Criteria)	Milestone Verification Process (What, How, Who, Where)	Anticipated Date (Months from Start of the Project)	Anticipated Quarter (Quarters from Start of the Project)
1.4	Project Kickoff and Administration: Kickoff meeting	Milestone	1.4.1	Hold kickoff meeting of project partners, stakeholders and IOU	Summary of meeting participants and outcomes included in Q1 report	M3	Q1
2.0	State-level Engagement: CPUC DRP proceeding	Milestone	2.1.1	Document input received on leveraging the project in CPUC DRP proceeding	Summary of input and engagement strategy included in Q4 report	M10	Q4
3.1	Data Sharing: Identify data	Milestone	3.1.1	Document data types needed by City and IOU, and sources of data	Summary of data assessment included in Q2 report	M6	Q2
3.3	Data Sharing: Assess and streamline data sharing	Milestone	3.3.1	Share data between City and IOU, identify gaps and opportunities	Summary of data shared, data gaps and recommendations included in Q3 report	M10	Q4
4.1	Local Planning and Forecasting: Local DER targets	Milestone	4.1.1	Document local DER targets and process used to develop them	Include summary of local DER forecasting in Q4 report	M10	Q4
		Go/no-go decision	Budget Period 1	Project team provides written determination that City and IOU have provided sufficient data to continue project.	EERE (or National Lab under TA) agree with project team's assessment.	M10	Q4
5.2	Integrated Planning: Explore grid value opportunities	Milestone	5.2.1	Document opportunities for DER deployment to mitigate grid impact and provide grid value	Findings included in Q5 report; if applicable, feedback received from National Lab under TA	M15	Q5
6.1	State-level Planning: Incorporate local data in state plans	Milestone	6.1.1	Recommend how to incorporate local data into state-level planning	Recommendations included in Q6 report	M18	Q6
7.1	Local Programs and	Milestone	7.1.1	Document policy	Summary of	M18	Q6

	Policies: Policy design options			recommendations for City to encourage targeted DER deployment	recommendations included in Q6 report		
8.1	Dissemination: Case study	Milestone	8.1.1	Publish San Francisco case study	Provide report to EERE and post on SFE website	M21	Q7
8.2	Dissemination: Education and Outreach	Milestone	8.2.1	Conduct national webinar	Presentation and attendance numbers provided to EERE	M24	Q8
8.2	Dissemination: Education and Outreach	Milestone	8.2.2	Present case study at meeting of local governments	Presentation and attendance numbers provided to EERE	M24	Q8